

MARCELLUS SHALE FAST FACTS NOVEMBER 2014 EDITION*

Each of the following sections is a quick snapshot of labor market information for Pennsylvania's Marcellus Shale (MS) related industries and related economic activity.

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*Note: Data sets from the Quarterly Census of Employment and Wages (QCEW) and the New Hires Program in this edition are for 2014Q1 and 2014Q3, respectively. For both data sets, this is the most current data available. Because neither data set is seasonally adjusted, the same quarter must be used when analyzing growth over time, in order to ensure seasonal factors are not influencing employment change. Therefore, 2014Q1 QCEW data are compared to 2010Q1, and 2014Q3 New Hire data are compared to 3rd quarter data for 2011, 2012, and 2013.

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pennsylvania
DEPARTMENT OF LABOR & INDUSTRY

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BACKGROUND INFORMATION

The purpose of this Fast Facts publication is to provide the most current available data on Marcellus Shale related economic activity. While several data sources are utilized in this document, the primary source is the Quarterly Census of Employment and Wages (QCEW).

The QCEW program derives its data from quarterly tax reports submitted to the Pennsylvania Unemployment Compensation system by employers subject to the state's unemployment insurance laws. This includes 95 percent or more of all wage and salary civilian employment in Pennsylvania.

In 2009, CWIA used the North American Industry Classification System (NAICS) to define the Marcellus Shale related industries. Much of the information included in this document reflects data on a group of six industries identified as "core," and a group of 30 industries identified as "ancillary" for Marcellus Shale related activity (see notes section below).

As Marcellus Shale related activity develops further in Pennsylvania, additional industries may be added to the ancillary group, based on factors such as significant employment gains in an industry in a Marcellus Shale geographic region or identification of a group of companies in the same industry involved in Marcellus Shale related activity. Of the current 30 ancillary industries, nine have been added since the April 2011 edition of this publication (* denotes one of the new nine).

Also included in this publication are several additional data sources that capture employer demand and hiring activity. For an explanation of all data sources, please refer to the "Definitions" section on page 17.

The data in this edition include government (federal, state, and local) employment in all Marcellus Shale related industries because significant non-private employment is present in a number of these industries, most notably: Highway, Street, & Bridge Construction; Engineering Services; Water Supply & Irrigation Systems; and Sewage Treatment Facilities.

Notes:

Marcellus Shale Core Industries (NAICS): Crude Petroleum & Natural Gas Extraction (211111); Natural Gas Liquid Extraction (211112); Drilling Oil & Gas Wells (213111); Support Activities for Oil & Gas Operations (213112); Oil & Gas Pipeline & Related Structures Construction (237120); and Pipeline Transportation of Natural Gas (486210).

Marcellus Shale Ancillary Industries (NAICS): Fossil Fuel Electric Power Generation (221112); Natural Gas Distribution (221210); Water Supply & Irrigation Systems (221310); Sewage Treatment Facilities (221320); Water & Sewer Line & Related Structures Construction (237110); Highway, Street, and Bridge Construction (237310)*; Nonresidential Site Preparation Contractors (238912); Petrochemical Manufacturing (325110)*; Industrial Gas Manufacturing (325120); Iron & Steel Mills & Ferroalloy Manufacturing (331110¹); Iron & Steel Pipe & Tube Manufacturing from Purchased Steel (331210); Mining Machinery & Equipment Manufacturing (333131); Oil & Gas Field Machinery & Equipment Manufacturing (333132); Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers (423810)*; Industrial Machinery and Equipment Merchant Wholesalers (423830)*; Industrial Supplies Merchant Wholesalers (423840)*; General Freight Trucking, Local (484110)*; Specialized Freight Trucking, Local (484220); Specialized Freight Trucking, Long-Distance (484230); Lessors of Other Real Property (531190); Construction, Mining & Forestry Machinery & Equipment Rental & Leasing (532412); Engineering Services (541330); Geophysical Surveying & Mapping Services (541360); Testing Laboratories (541380); Environmental Consulting Services (541620); Remediation Services (562910); Commercial & Industrial Machinery & Equipment Repair & Maintenance (811310); Administration of Air and Water Resource and Solid Waste Management Programs (924110)*; Administration of Conservation Programs (924120)*; Regulation and Administration of Communications, Electric, Gas, and Other Utilities (926130)*.

While the vast majority of Marcellus Shale related employment can be found in these industries, not all establishments in these industries are involved in Marcellus Shale. Asterisks indicate industries that have been added to the group of ancillary industries since the April 2011 edition of this publication.

¹NAICS 331110 replaced NAICS 331111 due to a change made by the Bureau of Labor Statistics – for an explanation of the implications of this change, please refer to page 19 in the "Definitions" section.

PENNSYLVANIA

ECONOMIC BACKGROUND

- **Pennsylvania's seasonally adjusted unemployment rate for October 2014 was 5.4%.**
 - This was lower than the U.S. rate of 5.8%.
 - O-T-M change was -0.3 percentage points.
 - O-T-Y change was -1.7 percentage points.
- **Pennsylvania's seasonally adjusted total nonfarm jobs for October 2014 was 5,802,300.**
 - O-T-M change was +12,600 (+0.2%).
 - O-T-Y change was +48,200 (+0.8%).
 - PA was still down 10,600 jobs since the start of the recession (December 2007).
- **Pennsylvania's new hire activity increased.**
 - There were about 741,900 new hires across all industries in the 3rd quarter of 2014.
 - This was an increase of about 72,800 (10.9%) from the 3rd quarter of 2013.
- **Employer demand increased in Pennsylvania.**
 - About 225,000 job ads were posted online in October 2014.
 - This was an increase of about 19,000 (+9.2%) over October 2013.
- **In Pennsylvania there were 1.6 unemployed persons for every online job posting in October 2014.**
 - The Pennsylvania rate was lower than the U.S. rate, which stood at 1.8.
 - The Pennsylvania rate was down from a peak of 4.8 unemployed per online job posting in late 2009.

O-T-M: Over-the-Month
O-T-Y: Over-the-Year

MARCELLUS SHALE RELATED

INDUSTRIES EMPLOYMENT:

SUMMARY STATISTICS

Employment (2010Q1 to 2014Q1):

- Core industries were up 15,170 (+116.2%).
- Ancillary industries were up 16,313 (+8.8%).
- Employment for all industries increased 186,442 (+3.5%).
- 2014Q1 Marcellus Shale related industries total employment is 228,930.

Establishments (2010Q1 to 2014Q1):

- 1,075 establishments were added (375 core, 700 ancillary).
- This represented 48.8% growth in the core industries and 5.7% growth in the ancillary industries; over the same time period, PA experienced 3.2% growth (+10,744) for all industries.
- Marcellus Shale related industries totaled 14,066 establishments in 2014Q1.

Wages (2013Q2 through 2014Q1):

- The average wage across all industries was about \$49,600.
- The average wage in the core industries was about \$93,000 which was approximately \$43,400 greater than the average for all industries.
- The average wage in the ancillary industries was about \$65,000, which was approximately \$15,400 greater than the average for all industries.

New Hires (2011Q3 to 2014Q3):

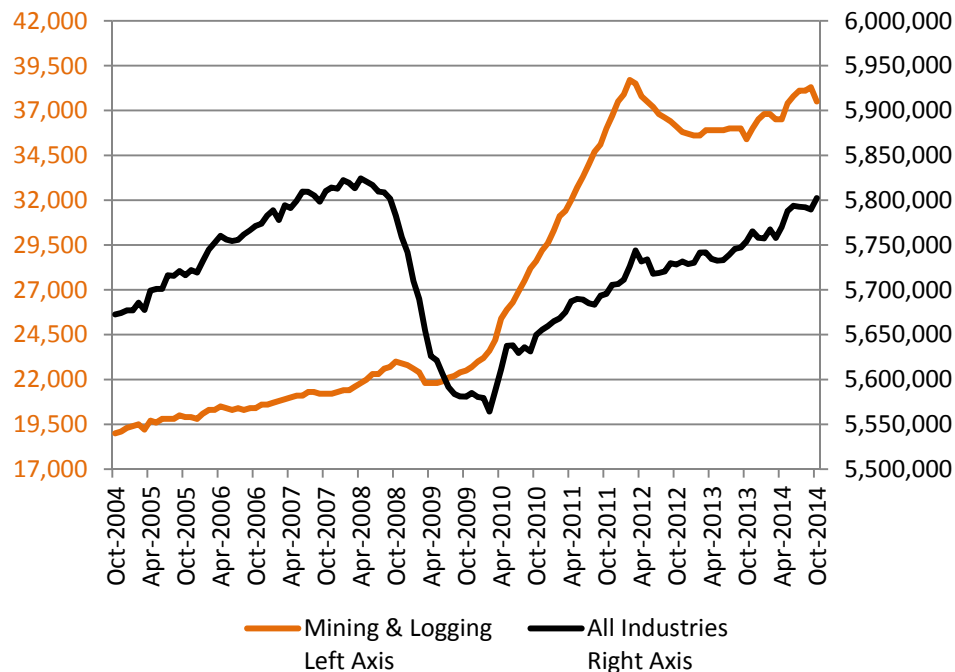
- Statewide new hires in the core industries were 16.6% higher in 2014Q3 than in 2011Q3.
- Statewide new hires in the ancillary industries were 6.6% higher in 2014Q3 than in 2011Q3.
- New hire counts increased in both core industries (29.8%), and in Ancillary industries (3.3%) from 2013Q3 to 2014Q3.
- Statewide new hires across all industries were 31.0% higher in 2014Q3 than in 2011Q3; statewide new hires across all industries increased by 10.9% from 2013Q3 to 2014Q3.

Online Job Postings (October 2014):

- There were about 4,800 online job postings statewide in core and ancillary industries. This is an O-T-Y increase of about 700 (16.8%).

MINING JOBS VS. TOTAL JOBS IN PENNSYLVANIA

Mining & Logging¹ Compared to Total Employment



Current Employment Statistics (All data are seasonally adjusted)

- Total Pennsylvania jobs were 5,802,300 (October 2014).
O-T-M change was +12,600 (+0.2%).
O-T-Y change was +48,200 (+0.8%).
Change from 10 years ago was +129,700 (+2.3%).
- Mining & Logging employment in Pennsylvania was 37,500.
O-T-M change was -800 (-2.1%).
O-T-Y change was +2,100 (+5.9%).
Change from 10 years ago was +18,500 (+97.4%).

O-T-M: Over-the-Month
O-T-Y: Over-the-Year

¹ Mining & Logging data are seasonally adjusted. Mining data, which are included in Mining & Logging, are not seasonally adjusted.

PENNSYLVANIA MARCELLUS SHALE RELATED INDUSTRIES DATA

Establishments & Employment in CWIA's Identified Core & Ancillary Marcellus Shale Related Industries

| Core Industries | | 2010Q1 | | 2014Q1 ¹ | | Vol. Change | |
|----------------------|---|---------------|----------------|---------------------|----------------|-------------|---------------|
| NAICS | Title | Est. | Emp. | Est. | Emp. | Est. | Emp. |
| 211111 | Crude Petroleum & Natural Gas Extraction | 211 | 3,066 | 260 | 5,547 | 49 | 2,481 |
| 211112 | Natural Gas Liquid Extraction | 19 | 250 | 21 | 669 | 2 | 419 |
| 213111 | Drilling Oil & Gas Wells | 106 | 2,549 | 115 | 3,371 | 9 | 822 |
| 213112 | Support Activities for Oil & Gas Operations | 218 | 3,611 | 451 | 12,388 | 233 | 8,777 |
| 237120 | Oil & Gas Pipeline & Related Structures | 88 | 2,307 | 161 | 4,833 | 73 | 2,526 |
| 486210 | Pipeline Transportation of Natural Gas | 126 | 1,276 | 135 | 1,421 | 9 | 145 |
| Totals | | 768 | 13,059 | 1,143 | 28,229 | 375 | 15,170 |
| Ancillary Industries | | 2010Q1 | | 2014Q1 ¹ | | Vol. Change | |
| NAICS | Title | Est. | Emp. | Est. | Emp. | Est. | Emp. |
| 221112 | Fossil Fuel Electric Power Generation | 68 | 4,249 | 67 | 3,369 | -1 | -880 |
| 221210 | Natural Gas Distribution | 155 | 4,707 | 173 | 5,361 | 18 | 654 |
| 221310 | Water Supply & Irrigation Systems | 377 | 6,740 | 378 | 7,111 | 1 | 371 |
| 221320 | Sewage Treatment Facilities | 478 | 4,306 | 485 | 4,385 | 7 | 79 |
| 237110 | Water, Sewer, & Related Structure Const. | 369 | 5,018 | 358 | 5,200 | -11 | 182 |
| 237310 | Highway, Street, & Bridge Construction | 530 | 17,325 | 514 | 17,220 | -16 | -105 |
| 238912 | Nonresidential Site Preparation Contractors | 633 | 7,520 | 651 | 8,520 | 18 | 1,000 |
| 325110 | Petrochemical Manufacturing | 4 | 533 | 0 | 0 | -4 | -533 |
| 325120 | Industrial Gas Manufacturing | 37 | 1,448 | 35 | 1,505 | -2 | 57 |
| 331210 | Iron, Pipe, & Tube Mfg. from Prchsd. Steel | 39 | 3,338 | 39 | 3,496 | 0 | 158 |
| 333131 | Mining Machinery & Equipment Mfg. | 23 | 3,066 | 23 | 3,099 | 0 | 33 |
| 333132 | Oil & Gas Field Machinery & Equip. Mfg. | 9 | 303 | 17 | 573 | 8 | 270 |
| 423810 | Const. & Mining Mach. Equip. Wholesalers | 210 | 3,427 | 197 | 3,743 | -13 | 316 |
| 423830 | Industrial Machinery & Equip. Wholesalers | 963 | 10,969 | 938 | 12,264 | -25 | 1,295 |
| 423840 | Industrial Supplies Merchant Wholesalers | 343 | 3,601 | 341 | 3,634 | -2 | 33 |
| 484110 | General Freight Trucking, Local | 1,152 | 8,335 | 1,404 | 11,359 | 252 | 3,024 |
| 484220 | Specialized Freight Trucking, Local | 1,045 | 9,627 | 1,214 | 12,700 | 169 | 3,073 |
| 484230 | Specialized Freight Trucking, Long-Distance | 267 | 3,301 | 282 | 3,351 | 15 | 50 |
| 531190 | Lessors of Other Real Estate Property | 232 | 736 | 249 | 947 | 17 | 211 |
| 532412 | Const., Mining, & Forestry Equip. Rental | 134 | 2,304 | 175 | 3,288 | 41 | 984 |
| 541330 | Engineering Services | 2,468 | 41,264 | 2,543 | 43,209 | 75 | 1,945 |
| 541360 | Geophysical Surveying & Mapping Services | 57 | 235 | 54 | 312 | -3 | 77 |
| 541380 | Testing Laboratories | 389 | 7,164 | 407 | 8,802 | 18 | 1,638 |
| 541620 | Environmental Consulting Services | 463 | 3,018 | 494 | 3,235 | 31 | 217 |
| 562910 | Remediation Services | 236 | 2,434 | 268 | 2,970 | 32 | 536 |
| 811310 | Comm. & Industrial Mach. & Equip. Repair | 1,015 | 7,514 | 1,072 | 7,791 | 57 | 277 |
| 924110 | Admin. of Air & Water Res. & Waste Mgmt. | 103 | 4,235 | 108 | 4,185 | 5 | -50 |
| 924120 | Admin. of Conservation Programs | 317 | 4,092 | 325 | 4,281 | 8 | 189 |
| 926130 | Reg. & Admin. of Comm., Elec., Gas, & Util. | 48 | 1,498 | 50 | 1,388 | 2 | -110 |
| Totals | | 12,223 | 184,388 | 12,923 | 200,701 | 700 | 16,313 |

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- From 2010Q1 to 2014Q1, employment in Core industries increased by 116.2%.
- Over the same period, employment in the Ancillary industries was up 8.8%.
- Employment across all industries increased 3.5% (186,422) over the same time period.

¹2014Q1 QCEW data are initial. These data may be revised upon release of QCEW 2014Q2 data.

Notes: These data are not seasonally adjusted. While most change was due to actual growth or decline, some movement may be due to seasonal patterns or administrative changes to data.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on Page 19.

WORKFORCE INVESTMENT AREA MARCELLUS SHALE RELATED INDUSTRIES DATA¹

The tables below depict employment growth in the core and ancillary industries for Workforce Investment Areas (WIA) with substantial Marcellus Shale drilling activity.

| Northern Tier | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|---------------|--------|---------------------|-------------|-------------|
| Core | 726 | 2,866 | 2,140 | 294.8% |
| Ancillary | 1,928 | 3,575 | 1,647 | 85.4% |

| Southwest Corner | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|------------------|--------|---------------------|-------------|-------------|
| Core | 884 | 4,627 | 3,743 | 423.4% |
| Ancillary | 9,693 | 11,209 | 1,516 | 15.6% |

| Central | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|-----------|--------|---------------------|-------------|-------------|
| Core | 466 | 2,362 | 1,896 | 406.9% |
| Ancillary | 8,879 | 10,080 | 1,201 | 13.5% |

| North Central | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|---------------|--------|---------------------|-------------|-------------|
| Core | 1,876 | 2,249 | 373 | 19.9% |
| Ancillary | 3,761 | 4,452 | 691 | 18.4% |

| Tri-County | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|------------|--------|---------------------|-------------|-------------|
| Core | 2,501 | 3,294 | 793 | 31.7% |
| Ancillary | 8,718 | 8,830 | 112 | 1.3% |

| Westmoreland & Fayette | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|------------------------|--------|---------------------|-------------|-------------|
| Core | 786 | 1,557 | 771 | 98.1% |
| Ancillary | 9,227 | 10,213 | 986 | 10.7% |

| 6 WIA Total | 2010Q1 | 2014Q1 ¹ | Vol. Change | Pct. Change |
|-------------|--------|---------------------|-------------|-------------|
| Core | 7,239 | 16,955 | 9,716 | 134.2% |
| Ancillary | 42,206 | 48,359 | 6,153 | 14.6% |

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- Southwest Corner WIA experienced the largest volume increase in Marcellus Shale Core Industries employment, with an increase of 3,743 employees; Northern Tier WIA was second with a volume increase of 2,140 employees. Southwest Corner WIA experienced the largest percentage increase in Core industry employment, equal to 423.4%; second was Central WIA with an increase of 406.9%.
- Northern Tier WIA experienced the largest volume increase in Marcellus Shale Ancillary Industries employment, adding 1,647; Northern Tier WIA also had the largest percentage increase with 85.4%.
- Across all six WIAs, employment in the Core industries increased by 134.2%; Ancillary industries employment increased by 14.6%.

¹2014Q1 QCEW data are initial. These data may be revised upon release of QCEW 2014Q2 data.

Notes: These data are not seasonally adjusted. While most change was due to actual growth or decline, some movement may be due to seasonal patterns or administrative changes to data.

WAGES FOR MARCELLUS SHALE CORE AND ANCILLARY INDUSTRIES¹

| NAICS | Core Industries Title | Average |
|---------|--|-----------------|
| 211111 | Crude Petroleum & Natural Gas Extraction | \$119,737 |
| 211112 | Natural Gas Liquid Extraction | \$103,077 |
| 213111 | Drilling Oil & Gas Wells | \$85,705 |
| 213112 | Support Activities for Oil & Gas Operations | \$76,068 |
| 237120 | Oil & Gas Pipeline & Related Structures Construction | \$85,563 |
| 486210 | Pipeline Transportation of Natural Gas | \$87,332 |
| | Average | \$92,914 |
| NAICS | Ancillary Industries Title | Average |
| 221112 | Fossil Fuel Electric Power Generation | \$118,178 |
| 221210 | Natural Gas Distribution | \$90,581 |
| 221310 | Water Supply & Irrigation Systems | \$58,793 |
| 221320 | Sewage Treatment Facilities | \$46,862 |
| 237110 | Water & Sewer Line & Related Structures Construction | \$66,788 |
| 237310 | Highway, Street, & Bridge Construction | \$56,665 |
| 238912 | Nonresidential Site Preparation Contractors | \$53,450 |
| 325120 | Industrial Gas Manufacturing | \$85,704 |
| 331110* | Iron & Steel Mills & Ferroalloy Manufacturing* | \$77,517 |
| 331210 | Iron & Steel Pipe & Tube Manufacturing from Purchased Steel | \$61,301 |
| 333131 | Mining Machinery & Equipment Manufacturing | \$62,309 |
| 333132 | Oil & Gas Field Machinery & Equipment Manufacturing | \$58,099 |
| 423810 | Construction & Mining Machinery Equipment Wholesalers | \$64,197 |
| 423830 | Industrial Machinery & Equipment Merchant Wholesalers | \$70,079 |
| 423840 | Industrial Supplies Merchant Wholesalers | \$64,021 |
| 484110 | General Freight Trucking, Local | \$44,356 |
| 484220 | Specialized Freight Trucking, Local | \$46,958 |
| 484230 | Specialized Freight Trucking, Long-Distance | \$51,330 |
| 531190 | Lessors of Other Real Estate Property | \$46,752 |
| 532412 | Construction, Mining, & Forestry Machinery & Equip. Rental | \$79,891 |
| 541330 | Engineering Services | \$80,392 |
| 541360 | Geophysical Surveying & Mapping Services | \$63,281 |
| 541380 | Testing Laboratories | \$64,328 |
| 541620 | Environmental Consulting Services | \$68,226 |
| 562910 | Remediation Services | \$59,368 |
| 811310 | Commercial & Industrial Mach. & Equip. Repair & Maintenance | \$55,417 |
| 924110 | Admin. of Air & Water Res. & Solid Waste Mgmt. Programs | \$60,989 |
| 924120 | Admin. of Conservation Programs | \$48,005 |
| 926130 | Reg. & Admin. Of Communications, Electric, Gas, & Other Utils. | \$81,602 |
| | Average | \$65,015 |

Source: Industry Data is from Pennsylvania's Quarterly Census of Employment and Wages

- The average wage across all industries for 2013Q2 through 2014Q1 was \$49,586.
- The average wage in the core industries was \$43,328 greater than the average for all industries; the average wage in the ancillary industries was \$15,429 higher.

¹ Average Wages for these industries were calculated by combining the most recent four quarters of available wage data; in this case 2013Q2 through 2014Q1.

²2014Q1 QCEW data are initial. These data may be revised upon release of QCEW 2014Q2 data.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on page 19.

PENNSYLVANIA & WORKFORCE INVESTMENT AREA MARCELLUS SHALE RELATED INDUSTRIES ONLINE JOB POSTING ACTIVITY¹

Pennsylvania Statewide Online Job Postings

| Area | October-2014 | October-2013 | Pct. Change |
|---|----------------|----------------|--------------|
| Total All Industries² | 225,285 | 206,390 | +9.2% |
| Core Industries | 289 | 289 | 0.0% |
| Ancillary Industries | 4,514 | 3,823 | +18.1% |
| Total MS related | 4,803 | 4,112 | 16.8% |

Select WIA Online Job Postings (core & ancillary combined)

| WIA | October-2014 | October-2013 | Pct. Change |
|------------------------|--------------|--------------|-------------|
| Northern Tier | 51 | 50 | 2.0% |
| Southwest Corner | 272 | 218 | 24.8% |
| Central | 203 | 225 | -9.8% |
| North Central | 79 | 55 | 43.6% |
| Tri-County | 209 | 208 | 0.5% |
| Westmoreland & Fayette | 106 | 100 | 6.0% |
| Total | 920 | 856 | 7.5% |

- **Pennsylvania Online Job Postings**
 - In October 2014, total job postings across all industries for Pennsylvania increased by 9.2% over October 2013.
 - Online postings for statewide Marcellus Shale related (core + ancillary) industries increased by 16.8% over the same period.
- **WIA Online Job Postings**
 - Five of the six WIAs with substantial Marcellus Shale drilling activity experienced an increase in online job posting activity O-T-Y, while one saw an annual decrease in HWOL postings.
 - The North Central WIA experienced the largest O-T-Y percentage increase in Marcellus Shale related job posting activity, rising by 43.6% followed by Southwest Corner, which rose 24.8%.
 - The six WIAs with substantial Marcellus Shale drilling activity saw online job postings increase by a combined 7.5% O-T-Y.

¹ Job Postings are counted using Wanted Analytics' Help Wanted Online job posting Spidering tool. Job posting increases should be viewed as an indication of **trend only**. For a complete explanation of this data set, please refer to the Definitions section of this document.

² Total Job postings in this table may not be equal to total postings for October 2014 published in the November 2014 edition of the Pennsylvania Fast Facts, due to continuous updates to the data.

2014 STATEWIDE HIGH-PRIORITY OCCUPATIONS RELATED TO MARCELLUS SHALE

The occupations listed in the table below are found within the staffing patterns of Marcellus Shale related core and ancillary industries and have been identified as High-Priority for Pennsylvania. High-Priority Occupations (HPOs) are identified as in demand by employers, have higher skills needs, and are most likely to provide family sustaining wages.

A Standard Occupational Code (SOC) is provided for each occupation. For a complete list of terms, please refer to the Staffing Pattern definition on page 18.

| SOC Code | SOC Title | Average Annual Wage | Education Level |
|----------|---|---------------------|------------------------|
| 13-2011 | Accountants & Auditors | \$70,380 | Bachelor's degree |
| 43-3021 | Billing & Posting Clerks & Machine Operators | \$33,910 | Short-term OJT |
| 43-3031 | Bookkeeping, Accounting & Auditing Clerks | \$36,380 | Moderate-term OJT |
| 49-3031 | Bus, Truck & Diesel Engine Mechanics | \$42,250 | Long-term training |
| 47-2031 | Carpenters | \$44,370 | Long-term training |
| 17-2051 | Civil Engineers | \$81,600 | Bachelor's degree |
| 47-4011 | Construction & Building Inspectors | \$49,350 | HS diploma plus expr |
| 47-2061 | Construction Laborers | \$35,130 | Short-term OJT |
| 13-1051 | Cost Estimators | \$61,120 | Bachelor's degree |
| 43-4051 | Customer Service Representatives | \$34,070 | Short-term OJT |
| 49-9051 | Electrical Power-Line Installers & Repairers | \$67,200 | Long-term training |
| 47-5081 | Helpers--Extraction Workers | \$36,500 | Moderate-term OJT |
| 17-2112 | Industrial Engineers | \$81,520 | Bachelor's degree |
| 49-9041 | Industrial Machinery Mechanics | \$46,680 | Long-term training |
| 53-7051 | Industrial Truck & Tractor Operators | \$34,330 | Short-term OJT |
| 51-9061 | Inspectors, Testers, Sorters, Samplers & Weighers | \$39,690 | Moderate-term OJT |
| 51-4041 | Machinists | \$40,130 | Long-term training |
| 49-9071 | Maintenance & Repair Workers, General | \$37,850 | Long-term training |
| 17-2141 | Mechanical Engineers | \$83,010 | Bachelor's degree |
| 47-2073 | Operating Engineers | \$47,220 | Moderate-term OJT |
| 47-2152 | Plumbers, Pipefitters & Steamfitters | \$53,460 | Long-term training |
| 43-5061 | Production, Planning & Expediting Clerks | \$48,730 | Moderate-term OJT |
| 47-5012 | Rotary Drill Operators, Oil & Gas | \$51,210 | Moderate-term OJT |
| 47-5071 | Roustabouts, Oil & Gas | \$36,880 | Moderate-term OJT |
| 41-4012 | Sales Representatives | \$63,690 | Moderate-term OJT |
| 41-4011 | Sales Representatives, Scientific & Technical | \$96,100 | Bachelor's degree |
| 43-6014 | Secretaries | \$32,720 | Short-term OJT |
| 47-5013 | Service Unit Operators, Oil, Gas & Mining | \$46,180 | Moderate-term OJT |
| 43-5071 | Shipping, Receiving & Traffic Clerks | \$32,890 | Short-term OJT |
| 47-1011 | Supervisors - Construction/Extraction Workers | \$68,490 | HS diploma plus expr |
| 49-1011 | Supervisors - Mechanics, Installers & Repairers | \$65,510 | HS diploma plus expr |
| 43-1011 | Supervisors - Office & Admin Support Workers | \$54,910 | HS diploma plus expr |
| 51-1011 | Supervisors - Production & Operating Workers | \$58,980 | Postsecondary training |
| 53-1031 | Supervisors - Transportation & Vehicle Operators | \$58,410 | HS diploma plus expr |
| 53-3032 | Truck Drivers, Heavy & Tractor-Trailer | \$42,340 | Postsecondary training |
| 53-3033 | Truck Drivers, Light or Delivery Services | \$33,080 | Short-term OJT |
| 51-4121 | Welders, Cutters, Solderers & Brazers | \$39,020 | Moderate-term OJT |
| 53-7073 | Wellhead Pumpers | \$42,330 | HS diploma plus expr |

Source: *The Center for Workforce Information & Analysis*

Workforce development funding in the commonwealth may be available for training programs required to enter these occupations.

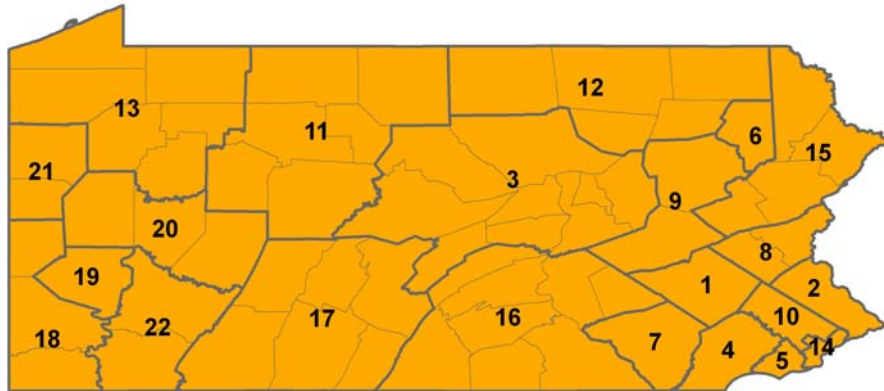
2014 REGIONAL HIGH-PRIORITY OCCUPATIONS RELATED TO MARCELLUS SHALE

The occupations listed in the table below are found within the staffing patterns of Marcellus Shale related core industries and have been identified as High-Priority for certain Workforce Investment Areas (WIAs).¹ High Priority Occupations (HPOs) are identified as in demand by employers, have higher skills needs, and are most likely to provide family sustaining wages.

A Standard Occupational Code (SOC) is provided for each occupation. For a complete list of terms, please refer to the Staffing Pattern definition on page 18.

| SOC Code | SOC Title | Education Level | HPO in WIA Numbers |
|----------|--|----------------------|--------------------|
| 17-3011 | Architectural & Civil Drafters | Associate degree | 18,19,22 |
| 51-4031 | Cutting, Punching & Press Machine Oprs | Moderate-term OJT | 11 |
| 47-5011 | Derrick Operators, Oil & Gas | Short-term OJT | 3 |
| 17-2071 | Electrical Engineers | Bachelor's degree | 4 |
| 43-6011 | Executive Secretaries & Admin Assist's | HS diploma plus expr | 3,4,5,8,14,19 |
| 53-7071 | Gas Compressor/Pumping Station Oprs | Moderate-term OJT | 3 |
| 11-1021 | General & Operations Managers | Bachelor's degree | 1,3 |
| 43-9061 | Office Clerks | Short-term OJT | 1,3 |
| 53-7072 | Pump Operators | Moderate-term OJT | 3 |

Source: The Center for Workforce Information & Analysis



Workforce development funding in the commonwealth may be available for training programs required to enter these occupations.

¹ These occupations were added to Local Workforce Investment Areas HPO lists through the HPO petition process.

| WIA # | WIA Name | WIA # | WIA Name |
|-------|---------------------------------|-------|-----------------------------------|
| 1 | Berks County WIA | 12 | Northern Tier WIA |
| 2 | Bucks County WIA | 13 | Northwest WIA |
| 3 | Central WIA | 14 | Philadelphia County WIA |
| 4 | Chester County WIA | 15 | Pocono Counties WIA |
| 5 | Delaware County WIA | 16 | South Central WIA |
| 6 | Lackawanna County WIA | 17 | Southern Alleghenies WIA |
| 7 | Lancaster County WIA | 18 | Southwest Corner WIA |
| 8 | Lehigh Valley WIA | 19 | Three Rivers WIA |
| 9 | Luzerne-Schuylkill Counties WIA | 20 | Tri-County WIA |
| 10 | Montgomery County WIA | 21 | West Central WIA |
| 11 | North Central WIA | 22 | Westmoreland-Fayette Counties WIA |

PENNSYLVANIA MARCELLUS SHALE RELATED INDUSTRIES NEW HIRES

| Core Industries Title | Volume of New Hires by Quarter | | | | Change 2011Q3 - 2014Q3 | |
|--|--------------------------------|---------------|---------------|---------------|---------------------------|--------------|
| | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. | Pct. |
| Crude Petroleum & Natural Gas Extraction | 366 | 186 | 387 | 273 | -93 | -25.4% |
| Natural Gas Liquid Extraction | 70 | 59 | 49 | 23 | -47 | -67.1% |
| Drilling Oil & Gas Wells | 440 | 195 | 202 | 285 | -155 | -35.2% |
| Support Activities for Oil & Gas Operations | 1,190 | 624 | 1,020 | 1,428 | 238 | 20.0% |
| Oil & Gas Pipeline & Related Structures | 205 | 1,274 | 380 | 648 | 443 | 216.1% |
| Pipeline Transportation of Natural Gas | 10 | 8 | 11 | 2 | -8 | -80.0% |
| Total | 2,281 | 2,346 | 2,049 | 2,659 | 378 | 16.6% |
| Ancillary Industries Title | Volume of New Hires by Quarter | | | | Change 2011Q3 - 2014Q3 | |
| | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. | Pct. |
| Fossil Fuel Electric Power Generation | 34 | 48 | 30 | 11 | -23 | -67.6% |
| Natural Gas Distribution | 103 | 223 | 115 | 220 | 117 | 113.6% |
| Water Supply & Irrigation Systems | 55 | 41 | 64 | 60 | 5 | 9.1% |
| Sewage Treatment Facilities | 43 | 57 | 155 | 62 | 19 | 44.2% |
| Water, Sewer Line & Related Structures | 378 | 334 | 370 | 264 | -114 | -30.2% |
| Highway, Street, & Bridge Construction | 2,256 | 2,012 | 1,989 | 2,047 | -209 | -9.3% |
| Nonresidential Site Preparation Contractors | 637 | 651 | 809 | 952 | 315 | 49.5% |
| Industrial Gas Manufacturing | 25 | 23 | 32 | 18 | -7 | -28.0% |
| Iron & Steel Mills & Ferroalloy Mfg.* | 432 | 386 | 316 | 396 | -36 | -8.3% |
| Iron, Steel Pipe, Tube Mfg. from Prehds. Steel | 158 | 103 | 195 | 188 | 30 | 19.0% |
| Mining Machinery & Equipment Mfg. | 288 | 223 | 284 | 258 | -30 | -10.4% |
| Oil & Gas Field Machinery & Equipment | 7 | 19 | 24 | 36 | 29 | 414.3% |
| Const. & Mining Mach. Equip. Wholesalers | 173 | 107 | 211 | 218 | 45 | 26.0% |
| Industrial Mach. & Equip. Wholesalers | 500 | 605 | 595 | 553 | 53 | 10.6% |
| Industrial Supplies Merchant Wholesalers | 284 | 243 | 259 | 110 | -174 | -61.3% |
| General Freight Trucking, Local | 635 | 650 | 1,099 | 1,117 | 482 | 75.9% |
| Specialized Freight Trucking, Local | 1,001 | 769 | 909 | 920 | -81 | -8.1% |
| Specialized Freight Trucking, Long-Distance | 158 | 390 | 212 | 187 | 29 | 18.4% |
| Lessors of Other Real Estate Property | 30 | 42 | 76 | 54 | 24 | 80.0% |
| Const., Mining, & Forestry Mach. & Equip. | 224 | 293 | 225 | 359 | 135 | 60.3% |
| Engineering Services | 3,782 | 3,699 | 3,757 | 4,009 | 227 | 6.0% |
| Geophysical Surveying & Mapping Services | 29 | 29 | 18 | 29 | 0 | 0.0% |
| Testing Laboratories | 519 | 743 | 600 | 620 | 101 | 19.5% |
| Environmental Consulting Services | 261 | 204 | 210 | 214 | -47 | -18.0% |
| Remediation Services | 540 | 328 | 388 | 482 | -58 | -10.7% |
| Commercial & Industrial Mach. & Equip. | 376 | 350 | 382 | 367 | -9 | -2.4% |
| Admin. Of Air & Water Res. & Waste | 5 | 4 | 1 | 4 | -1 | -20.0% |
| Admin. of Conservation Programs | 11 | 25 | 25 | 37 | 26 | 236.4% |
| Totals | 12,944 | 12,601 | 13,350 | 13,792 | 848 | 6.6% |

- In 2014Q3 there were 2,659 New Hires in the Marcellus Shale related core industries, Statewide. This was 16.6% higher than 2011Q3, and 29.8% higher than 2013Q3.
- In 2014Q3 there were 13,792 New Hires in the Marcellus Shale related ancillary industries, Statewide. This was 6.6% higher than 2011Q3 and 3.3% higher than 2013Q3.
- There were 741,938 New Hires across all industries in Pennsylvania in 2014Q3. This was 31.0% higher than in 2011Q3 and 10.9% higher than 2013Q3.

Note: In every economy there is job creation and job destruction every month and the result is employment change. New hires are linked to job creation; however, an increase in new hires does not directly equate to an increase in the total employment count. The new hires count is simply an indication of hiring activity in an industry. Separations, in the form of layoffs or quits, are linked to job destruction and account for the other half of the employment change equation. The balance of hires and separations result in the employment change.

*NAICS definition implemented with 2011Q1 data. Please see NAICS Changes in "Definitions" section on page 19.

WORKFORCE INVESTMENT AREA

MARCELLUS SHALE RELATED

INDUSTRIES NEW HIRES

The tables below depict the number of new hires in the core and ancillary industries for WIAs with substantial Marcellus Shale drilling activity during the second quarter of each year from 2011 to 2014. Volume change and percent change are both based on 2011Q3 to 2014Q3 calculations.

| Northern Tier | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|---------------|--------|--------|--------|--------|-------------|-------------|
| Core | 174 | 336 | 253 | 328 | 154 | 88.5% |
| Ancillary | 210 | 161 | 370 | 200 | -10 | -4.8% |

| Southwest Corner | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|------------------|--------|--------|--------|--------|-------------|-------------|
| Core | 343 | 682 | 518 | 616 | 273 | 79.6% |
| Ancillary | 365 | 408 | 455 | 345 | -20 | -5.5% |

| Central | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|-----------|--------|--------|--------|--------|-------------|-------------|
| Core | 225 | 90 | 60 | 54 | -171 | -76.0% |
| Ancillary | 455 | 323 | 278 | 354 | -101 | -22.2% |

| North Central | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|---------------|--------|--------|--------|--------|-------------|-------------|
| Core | 368 | 77 | 74 | 82 | -286 | -77.7% |
| Ancillary | 126 | 116 | 152 | 89 | -37 | -29.4% |

| Tri-County | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|------------|--------|--------|--------|--------|-------------|-------------|
| Core | 241 | 100 | 169 | 235 | -6 | -2.5% |
| Ancillary | 551 | 453 | 343 | 447 | -104 | -18.9% |

| Westmoreland/Fayette | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|----------------------|--------|--------|--------|--------|-------------|-------------|
| Core | 42 | 29 | 84 | 136 | 94 | 223.8% |
| Ancillary | 680 | 752 | 734 | 707 | 27 | 4.0% |

| 6 WIA Total | 2011Q3 | 2012Q3 | 2013Q3 | 2014Q3 | Vol. Change | Pct. Change |
|-------------|--------|--------|--------|--------|-------------|-------------|
| Core | 1,393 | 1,314 | 1,158 | 1,451 | 58 | 4.2% |
| Ancillary | 2,387 | 2,213 | 2,332 | 2,142 | -245 | -10.3% |

- For core industry New Hires, Southwest Corner had the largest volume increase (273), followed by Northern Tier (154); Westmoreland/Fayette had the largest percent increase (223.8%), followed by Northern Tier (88.5%).
- For ancillary industries, Westmoreland/Fayette was the only WIA which experienced an increase in New Hires: volume (27); percent (4.0%).
- Across these six WIAs, Marcellus Shale related core industry New Hires increased by 4.2% from 2011Q3 to 2014Q3; there were 10.3% fewer New Hires in the ancillary industries in 2014Q3 than in 2011Q3.

QUARTERLY WORKFORCE INDICATORS

Based on the U.S. Census Bureau, Local Employment Dynamics (LED)

Percentage of Industry¹ Employment by Age Group (2013Q4)

| Northern Tier | 14-24 | 25-34 | 35-44 | 45-54 | 55+ |
|---|-------|-------|-------|-------|-------|
| All industry groups | 13.3% | 19.6% | 20.0% | 24.3% | 22.8% |
| 2111 Oil and Gas Extraction | 6.9% | 31.2% | 25.6% | 23.5% | 12.6% |
| 2131 Support Activities for Mining | 14.7% | 33.4% | 20.2% | 19.6% | 12.1% |
| 2371 Utility System Construction | 15.1% | 28.6% | 21.3% | 21.0% | 14.1% |
| 4862 Pipeline Transportation of Natural Gas | 0.0% | 16.7% | 19.4% | 37.0% | 24.1% |

| Southwest Corner | 14-24 | 25-34 | 35-44 | 45-54 | 55+ |
|---|-------|-------|-------|-------|-------|
| All industry groups | 12.6% | 20.1% | 19.7% | 23.0% | 24.6% |
| 2111 Oil and Gas Extraction | 8.3% | 30.6% | 22.4% | 22.7% | 15.7% |
| 2131 Support Activities for Mining | 14.5% | 37.6% | 24.4% | 15.5% | 8.0% |
| 2371 Utility System Construction | 12.1% | 26.2% | 22.6% | 21.1% | 18.0% |
| 4862 Pipeline Transportation of Natural Gas | 3.7% | 18.8% | 23.9% | 31.7% | 20.6% |

| Central | 14-24 | 25-34 | 35-44 | 45-54 | 55+ |
|---|-------|-------|-------|-------|-------|
| All industry groups | 13.1% | 19.3% | 19.8% | 23.8% | 24.0% |
| 2111 Oil and Gas Extraction | 8.5% | 37.2% | 25.6% | 18.3% | 11.0% |
| 2131 Support Activities for Mining | 14.4% | 38.9% | 23.0% | 16.4% | 7.4% |
| 2371 Utility System Construction | 13.2% | 21.2% | 21.8% | 23.4% | 20.3% |
| 4862 Pipeline Transportation of Natural Gas | 2.8% | 19.8% | 22.6% | 32.1% | 21.7% |

| North Central | 14-24 | 25-34 | 35-44 | 45-54 | 55+ |
|---|-------|-------|-------|-------|-------|
| All industry groups | 12.3% | 18.3% | 20.0% | 24.8% | 24.5% |
| 2111 Oil and Gas Extraction | 8.2% | 24.2% | 22.6% | 23.3% | 21.6% |
| 2131 Support Activities for Mining | 12.1% | 32.5% | 22.2% | 19.9% | 13.4% |
| 2371 Utility System Construction | 15.4% | 28.4% | 23.3% | 20.4% | 12.5% |
| 4862 Pipeline Transportation of Natural Gas | 5.4% | 16.1% | 22.3% | 29.9% | 25.0% |

| Tri-County | 14-24 | 25-34 | 35-44 | 45-54 | 55+ |
|---|-------|-------|-------|-------|-------|
| All industry groups | 13.2% | 19.7% | 19.4% | 23.7% | 24.1% |
| 2111 Oil and Gas Extraction | 5.7% | 22.5% | 22.8% | 25.9% | 23.1% |
| 2131 Support Activities for Mining | 11.9% | 33.9% | 22.2% | 19.2% | 12.7% |
| 2371 Utility System Construction | 7.8% | 15.5% | 19.4% | 28.2% | 29.2% |
| 4862 Pipeline Transportation of Natural Gas | 0.0% | 30.8% | 23.1% | 30.8% | 0.0% |

| Westmoreland & Fayette | 14-24 | 25-34 | 35-44 | 45-54 | 55+ |
|---|-------|-------|-------|-------|-------|
| All industry groups | 13.6% | 18.9% | 19.1% | 23.4% | 25.0% |
| 2111 Oil and Gas Extraction | 6.4% | 32.1% | 21.6% | 26.7% | 13.5% |
| 2131 Support Activities for Mining | 13.7% | 41.2% | 25.5% | 13.6% | 6.1% |
| 2371 Utility System Construction | 8.4% | 21.4% | 24.5% | 26.8% | 18.9% |
| 4862 Pipeline Transportation of Natural Gas | 2.4% | 17.3% | 23.1% | 33.7% | 23.6% |

*** Indicates that data cannot be disclosed due to confidentiality restrictions or data quality standards

- Workers in the Marcellus Shale related industry groups tended, on average, to be younger than the total across all industries.
- The percentage of workers in core related industry groups aged 55 and over was smaller than found across all industries.

¹ Local Employment Dynamics data are only available at the 4-digit NAICS level. While these industry groups contain some employment from non-Marcellus Shale related core industries, they help to provide an understanding of the industries' employment composition by age.

DEFINITIONS:

LABOR FORCE STATISTICS* - Source: Pennsylvania Local Area Unemployment Statistics (LAUS)

The labor force and unemployment data are based on the same concepts and definitions as those used for the official national estimates obtained from the Current Population Survey (CPS). The Local Area Unemployment Statistics (LAUS) program measures employment and unemployment on a place-of-residence basis and produces estimates using equations based on regression techniques. This method utilizes data from several sources, including the CPS, the Current Employment Statistics (CES) program, and state unemployment insurance (UI) programs. The LAUS program does not produce estimates for any demographic groups.

Unemployment Rate: The number of unemployed as a percent of the labor force.

Unemployment: All persons aged 16 years and older who had no employment during the reference week (contains the 12th day of the month), were available for work (except for temporary illness), and had made specific efforts to find employment sometime during the four-week period ending with the reference week. Persons who were waiting to be recalled to jobs from which they had been laid off need not to have been looking for work to be classified as unemployed.

Employment: All persons who, during the week which includes the 12th day of the month, (a) did any work as paid employees, worked in their own businesses or professions or on their own farm, or worked 15 hours or more as unpaid workers in enterprises operated by members of their families, or (b) were not working but who had jobs from which they were temporarily absent. Each employed person is counted only once, even if the person holds more than one job. Included are the self-employed, unpaid family workers, agricultural workers, and private household workers, who are excluded by the CES survey.

Labor Force: All persons either working or looking for work or classified as employed or unemployed.

JOBS* - Source: Pennsylvania Department of Labor & Industry, Current Employment Statistics (CES)

Each month the CES program surveys about 140,000 national businesses and government agencies in order to provide detailed industry data on employment, hours, and earnings of workers on non-farm payrolls. This is a collaborative effort between BLS and the states. CES produces a count of jobs, not of people.

Nonfarm Jobs: The total number of persons on establishment payrolls employed full or part time who received pay for any part of the pay period that includes the 12th day of the month.

Temporary and intermittent employees are included, as are any employees who are on paid sick leave, on paid holiday, or who work during only part of the specified pay period. A striking employee who only works a small portion of the survey period, and is paid, would be included as employed under the CES definitions. Persons on the payroll of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed, unpaid family or volunteer workers, farm workers, and domestic workers. Persons on layoff, strike, or leave without pay for the entire pay period, or who have not yet reported for work are not counted as employed. Government employment covers only civilian employees.

*** THESE DATA ARE SEASONALLY ADJUSTED:** Seasonal adjustment removes the change in employment that is due to normal seasonal hiring or layoffs (holidays, weather, etc.), thus leaving an over-the-month change that reflects only employment change due to trend and irregular movements.

DEFINITIONS:

QUARTERLY WORKFORCE INDICATORS - Source: U.S. Census Bureau, Local Employment Dynamics

The Quarterly Workforce Indicators (QWI) are a set of economic indicators that can be queried by different levels of geography as well as by industry, gender, and age of workers. The QWI are built upon wage records in the Unemployment Insurance (UI) system and information from state Quarterly Census of Employment and Wages (QCEW) data.

QUARTERLY CENSUS OF EMPLOYMENT AND WAGES - Source: The Pennsylvania Department of Labor & Industry, Quarterly Census of Employment and Wages

Employment: Employment data include all employment covered under the Pennsylvania Unemployment Compensation program for each of the three months in the quarter. The employment count represents the number of full-time and part-time employees who worked during or received pay for the payroll period including the 12th of the month. The employment totals for each month are averaged for the quarter employment count. Included are persons on paid vacations or on paid sick leave. Workers temporarily earning no wages due to labor-management disputes, layoffs or other reasons are not reported as employed. Persons on the payroll of more than one employer during the same reference week are reported more than once.

Establishment: The location of a certain economic activity, such as a factory, store, office, or mine, that produces goods or services. It is typically at a single physical location and engaged in one, or predominantly one, type of economic activity. An employer may have one or more establishments.

Wages: Total wages include total compensation paid during a calendar quarter (including bonuses). Average wages are calculated by dividing total wages for a quarter by average employment in that quarter.

STAFFING PATTERNS - Source: Pennsylvania Department of Labor & Industry

Staffing Pattern: A listing of the occupations most commonly found within a particular industry. This information comes from the biennial *Long-Term Occupational Employment Projections* data.

Average Annual Wage: The mean annual wage earned by workers in the occupation, assuming 40 hours per week, 52 weeks a year. Wage data is derived from the annual *Occupational Employment Statistics (OES)* survey.

Educational Attainment: The Bureau of Labor Statistics (BLS) provides information about entry-level education, related work experience, and typical on-the-job training requirements for each of several hundreds of occupations.

Educational Attainment Level Abbreviations:

- **Short-term or Moderate-term OJT** – basic tasks and skills are learned through a period of on-the-job training lasting up to one year. A high school diploma may be required.
- **Long-term training** – a high school diploma and at least one year of on-the-job training or an apprenticeship.
- **HS diploma plus experience** – a high school diploma and training gained through hands-on work in a similar occupation.
- **Postsecondary training** – training is gained through a postsecondary training program. Some period of related work experience may be required.
- **Associate degree** – degree completed after two years of full-time schooling beyond high school. Some period of related work experience may be required.
- **Bachelor's degree** – degree completed after four years of full-time schooling beyond high school. Some period of related work experience may be required.
- **Master's Degree** – degree completed after two years of full-time schooling beyond a bachelor's degree. Some period of related work experience may be required.
- **Doctoral, or Professional degree** – degree programs requiring 3-6 years of education at the college or university level beyond a four-year bachelor's degree.

